

**IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF MASSACHUSETTS**

SINGULAR COMPUTING LLC,

Plaintiff,

v.

GOOGLE LLC,

Defendant.

C.A. No. 1:19-cv-12551-FDS

Hon. F. Dennis Saylor IV

**DEFENDANT GOOGLE LLC'S OPPOSITION TO PLAINTIFF'S  
MOTION FOR LEAVE TO SUPPLEMENT INFRINGEMENT CONTENTIONS  
TO CITE ACCUSED SOURCE CODE**

## **I. INTRODUCTION**

Days after Singular served its infringement contentions in September 2020, Google informed Singular that those contentions were insufficient to disclose Singular's infringement theories and requested that Singular supplement its contentions. Singular refused to do so. Now, nearly two years later, Singular argues that it should be permitted to supplement its infringement contentions to add citations to the entirety of numerous large source code files, without any identification as to how Singular contends any code in those files demonstrates infringement of the asserted claim limitations. The file-level citations themselves provide no insight into Singular's infringement theories; instead, they hide the ball by broadly identifying hundreds of pages and thousands of lines of Google's source code. Moreover, Singular offers no explanation for its delay in supplementing its infringement contentions to add citations to Google's source code, most of which has been available for nearly two years. Although Singular has complained about Google's source code production, those complaints have either resulted in a compromise between the parties or refusal of relief by the Court. With expert discovery looming, the more likely explanation for Singular's proposed citations is that Singular wants to pave the way for its expert to devise and advance as-yet unrevealed infringement theories that Singular will claim can be found somewhere among the hundreds of pages of cited source code. Google informed Singular that it would not have opposed Singular's motion had its amendments provided Google with actual notice as to the basis for Singular's positions, but Singular filed this motion anyway. Permitting Singular's eleventh-hour attempt to incorporate vast swaths of source code without any explanation as to that code's supposed import would be prejudicial to Google. Singular's motion should be denied.

## II. BACKGROUND

Singular served its preliminary infringement contentions on September 4, 2020. Dkt. Nos. 355-9, 355-10, 355-11. Google informed Singular the very next week that its infringement contentions were improper under the local rules because Singular had failed to identify “where and how claim elements appear in the accused products, instead relying on pasted images and vague language.” Ex. 1 at 1.<sup>1</sup> After continued discussion among the parties, Google “reiterate[d] that Singular’s infringement contentions fail[ed] to identify specifically where and how the claim limitations appear in the accused products, as required by the local rules.” Ex. 2 at 1. Google explained that “at minimum,” Singular must “identify how the reproduced content” in Singular’s infringement contentions “allegedly aligns with the relevant limitation[s].” Singular refused to supplement its contentions. Ex. 3.

In November 2020, Google made its source code available for Singular’s review pursuant to Local Rule 16(d)(4)(a).<sup>2</sup> See Dkt. No. 295-5. Singular reviewed the source code several times the following month. Saraswat Decl. ¶ 3. Singular did not, however, supplement its infringement contentions to incorporate references to source code before the Court’s deadline for the parties to supplement their contentions without leave on March 1, 2021. *Id.* ¶ 4.

Several months passed before Singular reviewed Google’s source code again on July 8, 2021. Saraswat Decl. ¶ 7. Following that review, counsel for Singular requested additional source code, which Singular maintained related to “components of the Accused TPU Boards.”

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<sup>1</sup> Citations to “Ex.” refer to the exhibits to the Declaration of Anant Saraswat in Support of Google’s Opposition to Singular’s Motion for Leave to Supplement Infringement Contentions to Cite Accused Source Code (“Saraswat Decl.”).

<sup>2</sup> Local Rule 16.6(d)(4)(A) requires the accused infringer to disclose “documents sufficient to show the composition, operation, construction, and performance of the accused components, elements, or functionality identified in the patentee’s infringement claim charts,” which may include “source code.”

*Id.*, Ex. 4. To avoid a dispute, Google agreed to provide the source code that Singular requested, though Google did not concede that it was relevant to Singular’s infringement contentions. *See id.* Google’s July 2021 production of source code amounted to less than two hundred out of the more than one thousand source code files that Google produced overall. Saraswat Decl. ¶ 12.

Singular reviewed Google’s source code again on July 20 and July 21, 2021, after which Singular requested even more source code. *See* Dkt. No. 355-3. Singular’s request included “*all other* source code corresponding to the TensorCore in the TPU v2 and TPU v3,” and thus Google refused to provide the requested volume of source code. *See* Dkt. No. 263 at 9 (emphasis added). Singular then wrote to Google indicating its “inten[t] to supplement its infringement contentions . . . if necessary,” but that it could not do so “at this time” given Google’s “failure to produce highly relevant, critical source code.” Dkt. No. 355-4. Finally, Singular filed a motion to compel the production of the additional source code it had requested. Dkt. No. 263. The Court denied Singular’s motion on August 27, 2021. Dkt. No. 309.

Following the Court’s status conference on August 27, 2021, the case was stayed. During the stay, Singular reviewed the source code on August 31, 2021, and again on September 1, 2021. Saraswat Decl. ¶ 6. The following week, Singular requested printouts for the first time, and asked that Google print hundreds of pages of source code files. Dkt. No. 355-5. Noting that the volume of Singular’s request exceeded the Protective Order’s limits and “indicate[d] that Singular” wanted to review the code “[in] paper in the first instance,” which is improper, Google informed Singular that it would consider Singular’s request if and when the stay was lifted. Dkt. No. 355-5 at 1.

When the stay was lifted in May 2022, Singular renewed its request for source code printouts, many of which still exceeded the Protective Order’s limits. *See* Dkt. No. 355-6; Dkt.

No. 87 at 17. Following the parties' meet and confer, Singular and Google arrived at an agreement that would provide Singular with source code printouts that comported with the agreed limitations in the Protective Order. Dkt. No. 355-8. Google further agreed that after Dr. Khatri (Singular's expert) had reviewed the source code on the Google source code computer once more, if Singular still believed that it needed printouts beyond the Protective Order's limits, Google would consider those requests "on a case-by-case basis." *See id.* Following Dr. Khatri's subsequent reviews on July 8, 2022, and July 11, 2022, Singular requested additional printouts. Google provided those printouts on July 27, 2022. *See* Saraswat Decl. ¶ 8. Of the files that Singular requested to print, all except four had been available since November 2020. *Id.* The remaining four files had been available since July 2021. *Id.*

Nearly two years after Singular served its initial contentions, on August 8, 2022, Singular indicated that it would move for leave to amend its infringement contentions "to add citations to Google's source code." Ex. 5 at 3. In response, Google requested a redlined copy of the proposed supplemental infringement contentions, which Singular provided. *Id.* at 2.

Singular's proposed supplemental infringement contentions include citations to hundreds of pages of Google's source code, with no explanation of where within those page ranges the accused limitation is present. *See* Dkt. No. 355-15 ('156 patent); Dkt. No. 355-16 ('273 patent).

For example:

- For the asserted patents' "device" limitation, Singular cites **454 pages** of source code, including 54 distinct files. *See* 355-15 at 5; 355-16 at 5.
- For the asserted patents' "low precision high dynamic range (LPHDR) execution unit" limitations, Singular cites **224 pages** of source code. *See* 355-15 at 7; 355-16 at 7.

And all of Singular's proposed supplemental citations refer to several source code files in their entirety, without explanation as to which of those individual files contain the accused limitation.

For example, the 224 pages Singular cites to support the asserted patents’ “low precision high dynamic range (LPHDR) execution unit” limitations span across **30 separate source code files**. *See* Dkt. No. 355-15 at 7; Dkt. No. 355-16 at 7; Saraswat Decl. ¶ 10. The pages that Singular cites to support the ’156 patent’s “at least one first computing device adapted to control...” limitation comprise **23 separate source code files**. *See* Dkt. 355-15 at 10; Saraswat Decl. ¶ 11. None of Singular’s proposed source code citations offer **any** detail or description of how Singular contends that the various source code files allegedly satisfy the limitations. *See generally* Dkt. No. 355-15; Dkt. No. 355-16.

Singular’s proposed source code citations also refer to the exact same source code to illustrate distinct limitations, without explaining how the citations support the various limitations. For example, Singular cites the same 224 pages of code with respect to the “low precision high dynamic range (LPHDR) execution unit” limitations as it does for the error limitation, which requires that “the statistical mean . . . differs by at least . . . .05% from the result of an exact mathematical calculation.” *See* Dkt. No. 355-15 at 7 (LPHDR limitation citing 224 pages of source code); *id.* at 10 (error range limitation citing the same); Dkt. No. 355-16 at 7 (LPHDR limitation citing 224 pages of source code); *id.* at 10 (error range limitation citing the same). Singular’s proposed citations fail to differentiate among the source code allegedly applicable to those distinct claim limitations, instead citing broad swaths of printed files. *See id.*

Finally, all but four of the 54 source code files Singular proposes to cite in its supplemental infringement contentions have been available to Singular since November 2020. Saraswat Decl. ¶ 13. The remaining four files that Singular proposes to cite were added in July 2021, following Singular’s complaints. *Id.*

Given the vast amount of source code cited in Singular’s proposed supplemental infringement contentions without any explanation of the relevance of those citations, Google informed Singular that it would oppose its proposed supplementation in its current form. Saraswat Decl., Ex. 5 at 1. In so doing, Google noted that Singular’s proposed supplemental infringement contentions failed to address the deficiencies in the original contentions Singular served. *Id.* Google made clear, however, that it “would *not* oppose Singular supplementing otherwise specific contentions to include specific citations to Google’s source code,” if they “provided Google with notice as to what Singular’s infringement contentions are for the asserted claims.” *Id.* Singular’s motion followed.

### III. ARGUMENT

The deadlines in the Court’s scheduling order may be modified “only for good cause and with the judge’s consent.” Fed. R. Civ. P. 16(b); *see* Dkt. No. 70 at 1 (providing that later than “30 days before the date of the Markman hearing,” preliminary infringement disclosures may be supplemented “only by leave of court, for good cause shown”); *see* L.R. 16.6(d)(5) (requiring “good cause” for amendments to preliminary patent-related disclosures). “The Rule 16 good cause standard focuses on the diligence (or lack thereof) of the moving party[.]” *Abiomed, Inc. v. Maquet Cardiovascular LLC*, No. CV 16-10914-FDS, 2020 WL 10500362, at \*2 (D. Mass. June 24, 2020) (citations omitted). “Prejudice to the opposing party,” however, “remains relevant.” *O’Connell v. Hyatt Hotels of Puerto Rico*, 357 F.3d 152, 155 (1st Cir. 2004).<sup>3</sup>

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<sup>3</sup> In its motion, Singular fails to apply the Court’s usual good cause standard, instead relying without explanation on several factors articulated by the Fifth Circuit. *See* Dkt. No. 356 (“Mot.”) at 3 (citing a Massachusetts district court relying on *S&W Enters., L.L.C. v. SouthTrust Bank of Alabama, NA*, 315 F.3d 533, 536 (5th Cir. 2003)).

Here, there is no good cause for Singular’s motion for leave to supplement its infringement contentions. Google would be prejudiced if Singular’s supplementation were permitted, and Singular was not diligent.

**A. Google would be prejudiced by allowing Singular to add its proposed source code citations given Singular’s failure to tie the source code to its contentions.**

Singular’s broad, overlapping proposed citations do not put Google on notice of Singular’s infringement theories that the source code citations allegedly support, which is prejudicial at this stage of this litigation. The citations Singular proposes to add include hundreds of pages, comprising thousands of lines of source code. *See generally* Dkt. No. 355-15; 355-16. None of these proposed citations include any narrative indicating where the accused limitations appear within the source code cited. For example, for the patents’ “device” limitation, Singular cites 454 pages of source code, with no elaboration. *See* Dkt. No. 355-15 at 5 (citation limited to “*See also* GOOG-SING-SC-000001-454”); Dkt. No. 355-16 at 5 (same). As another example, for the LPHDR execution unit limitation and the error range limitation, Singular cites 224 pages of source code, without any attempt to explain how the source code files allegedly demonstrate the presence of either limitation. *See e.g.*, Dkt. No. 355-15 at 7 (LPHDR limitation citing 224 pages of source code); *id.* at 9 (error range limitation citing the same). Absent more particularity, these citations provide Google no notice of how Singular contends Google’s source code supports Singular’s infringement theory.

With fact discovery closed and expert discovery looming, these proposed citations are particularly prejudicial to Google. *Richtek Tech. Corp. v. uPi Semiconductor Corp.*, No. C 09-05659 WHA 2016 WL 1718135, at \*3 (N.D. Cal. Apr. 29, 2016) (denying leave to amend to add new products noting that following a series of stays, “it [was] time for the case to narrow, not expand”). Indeed, while the proposed citations seemed designed to give Singular and its



infringement expert maximum flexibility in devising a previously undisclosed theory, the broad-brush citations prevent Google from preparing its defenses after the close of fact discovery. Furthermore, Singular’s continued refusal to provide specific infringement contentions, which Google has been requesting since September 2020, contravenes the Court’s local rules. *See* Local Rule 16.6(d)(1)(A) (patentee must provide “[i]nfringement claim charts identifying, *with as much specificity as reasonably possible* . . . an element-by-element description of where and how each element of each asserted claim is found in each accused product or method”) (emphasis added). Without time to prepare its defenses to Singular’s still undisclosed theories, Google will learn of Singular’s infringement theories only upon receiving Singular’s opening expert report, which is highly prejudicial. By that time, Google will have had to disclose opinions related to invalidity, with no knowledge of how Singular is interpreting the same claims for purposes of its infringement theory. And Google will have only a very limited period to digest, assess, and respond to Singular’s new theories in its responsive expert reports, including its non-infringement report.

Singular defends its proposed supplemental contentions by arguing that they do not add any new infringement theories. *See* Mot. at 5. But worse than adding a new theory, the breadth of the source code that Singular proposes to cite makes it impossible to discern what theories Singular advances. Courts do not tolerate such attempts for a patentee to preserve broad avenues of infringement at this stage in the litigation. Instead, “after a plaintiff-patentee has had a reasonable opportunity to review the source code,” as Singular has had here, “the patentee’s time for trolling the proverbial waters for a theory of infringement comes to an end.” *Diagnostic Sys. Corp. v. Symantec Corp.*, No. SACV-06-1211 DOC (ANx), 2009 WL 1607717, at \*5-6 (C.D. Cal. June 5, 2009) (requiring the patentee to supplement infringement contentions to “expressly

identify[] and describe[e] what, if any, source code for [the] accused software products infringe[s]"). With fact discovery closed and expert discovery approaching, it is time for Singular to "fish or cut bait with respect to its specific theory of infringement." *Id.*; see *Philips N. Am. LLC v. Fitbit LLC*, No. CV 19-11586-FDS, 2021 WL 5417103, at \*5 (D. Mass. Nov. 19, 2021) ("[C]ourts generally disfavor amendments that add new theories of infringement, particularly late in the litigation and near or after the close of discovery, as unduly prejudicial.").

Contrary to Singular's argument, the prejudice to Google is not avoided by the fact that Google is "intimately familiar" with its own source code. Mot. at 6. Google of course has knowledge of its own source code, but it has *no* knowledge of how Singular contends that source code satisfies the elements of the asserted claims, which Singular was required to disclose nearly two years ago. See Local Rule 16.6(d)(1)(A). Furthermore, Singular's refusal to provide more specific citations also deprives Google of the benefit of having provided its source code and technical documentation early in the litigation, which was intended to help Google "better evaluate its defenses." See *Diagnostic Sys. Corp.*, 2009 WL 1607717, at \*3 ("[A] defendant takes the initiative . . . by providing its source code to the plaintiff for the purpose of obtaining [infringement charts] that clearly describe how the defendant's code allegedly infringes.").

Singular's continued refusal to provide specific infringement contentions, which Google has been requesting since September 2020 prejudices Google and contravenes the Court's local rules. See Local Rule 16.6(d)(1)(A). Nearly two years after Google's first complaints about Singular's vague infringement contentions, Singular still has not provided infringement contentions that meaningfully elucidate Singular's theories, and thus Google opposes Singular's motion. But, as Google has indicated, if Singular were seeking to timely provide supplemental infringement contentions with "as much specificity as reasonably possible," *id.*, Google would

not oppose such a supplementation. Given that Singular has instead sought to preserve all avenues of alleged infringement by citing vast quantities of source code, Singular's proposed supplementation is prejudicial to Google and its motion should be denied.<sup>4</sup>

**B. Singular was not diligent in seeking to add source code citations to its infringement contentions.**

All but four of the files Singular proposes to add to its infringement contentions have been available for Singular's review since November 2020. The remaining four files were added in July 2021. In its motion, Singular conflates (1) its recent requests for source code printouts, (2) its expert's recent source code review, and (3) Google's source code production. *See Mot.* at 4. But the fact that Singular only recently reviewed source code printouts and had its expert review Google's source code does not excuse Singular's delay in supplementing its contentions. Contrary to Singular's motion, there has been *no* "recent completion of the . . . **production** of the source code." *Id.* (emphasis added). To the extent Singular refers to Google's recent production of source code *printouts*, Singular does not explain why it did not request printouts following its first several reviews of source code in 2020, or before the case was stayed in August 2021. Again, *all* of the source code Singular requested to print had been on Google's source code computers since July 2021, and the vast majority of those files had been available since November 2020. *Id.*

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<sup>4</sup> The only case that Singular cites to support its argument that Google will not be prejudiced is *Cloud Farm Assocs., L.P. v. Volkswagen Grp. of Am., Inc.*, No. CA 10-502-LPS, 2012 WL 3069390 (D. Del. July 27, 2012), which is irrelevant. There, the court permitted the patentee to amend its complaint to assert claims of infringement for new patents after determining that the scheduling order could be amended to permit the defendants to "respond to [the] newly asserted infringement allegations," and that doing so was less costly than allowing the plaintiff to file "a new lawsuit against Defendants." *Id.* at \*6.

Singular attempts further obfuscation by citing its complaints about Google’s source code throughout July 2021. *See* Mot. at 2. But Singular’s motion does not acknowledge that it filed a motion to compel the further production of source code based on these complaints on July 23, 2021, which the Court denied. Dkt. No. 309. Thus, although Singular has complained previously about Google’s source code production, those complaints were either resolved cooperatively or found to be without merit. Singular cannot rely on its own decision to delay reviewing Google’s source code and requesting printouts as the basis for its diligence. *See Implicit, LLC v. Trend Micro, Inc.*, No. 6:16-CV-80-JRG, 2017 WL 11630761, at \*2 (E.D. Tex. July 21, 2017) (patentee was not diligent in seeking to amend infringement contentions based on information learned in source code review where “Plaintiff did not review the source code for several months after it was made available”). And although the case was stayed for several months, Singular has offered no explanation as to why it “was unable to perform a comprehensive review of the available infringement information in the months before the stay was imposed.” *Acer, Inc. v. Tech. Prop. Ltd.*, No. 5:08-CV-00877 JF/HRL, 2010 WL 3618687, at \*5 (N.D. Cal. Sept. 10, 2010).

None of the cases upon which Singular relies support that it was diligent. *See* Mot. at 4-5. In *SpeedTrack, Inc. v. Amazon.com, Inc.*, No. 4:09-CV-04479-JSW(KAW), 2018 WL 3328423 (N.D. Cal. July 6, 2018), unlike here, the defendant had not even completed its source code production when the plaintiff sought leave to amend its infringement contentions. *Id.* at \*5. Similarly, in *IBM Corp. v. Zillow Grp., Inc.*, No. C20-851 TSZ, 2020 WL 3266220 (W.D. Wash. June 17, 2020), the defendant had not yet produced source code. *Id.* at \*1. And there, the plaintiff had to amend its infringement contentions “within thirty-five (35) days” of the source code production—far less time than Singular has taken here. Finally, in *Delphix Corp. v. Actifio*,

*Inc.*, No. 13-CV-04613-BLF (HRL), 2015 WL 5693722 (N.D. Cal. Sept. 29, 2015), Actifio was diligent in moving to amend its infringement contentions after taking only two months to review source code and technical documentation before moving to amend. *Id.* at \*3. Accordingly, Singular's lack of diligence is another reason that its motion should be denied.

#### IV. CONCLUSION

For the foregoing reasons, Google requests that Singular's motion for leave to supplement its infringement contentions be denied.

Respectfully submitted,

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